



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/594,607	09/28/2006	Ulrich Knott	5038.1039	5237
23280	7590	09/09/2008	EXAMINER	
Davidson, Davidson & Kappel, LLC			PATEL, DEVANG R	
485 7th Avenue				
14th Floor			ART UNIT	PAPER NUMBER
New York, NY 10018			1793	
			MAIL DATE	DELIVERY MODE
			09/09/2008	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/594,607	KNOTT ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	DEVANG PATEL	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 28 September 2006.
- 2a) This action is **FINAL**.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 12-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 12-18 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. PCT/DE2005/000436.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                        |                                                                   |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____ .                                    |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/28/06</u> .                                                 | 6) <input type="checkbox"/> Other: _____ .                        |

## DETAILED ACTION

### ***Priority***

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. PCT/DE2005/000436, filed on 3/11/05.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. **Claims 12-18** are rejected under 35 U.S.C. 103(a) as being unpatentable over Takagi et al. (US 3691622) in view of Khatuntsev et al. (SU 1757783, referring as SU '783).

a. **Regarding claim 12, Takagi et al.** discloses a rotary friction welding machine for joining a first component 11 to a second component 20 comprising: a first spindle 9 and a second spindle 18, the first spindle and the second spindle forming the two subsystems to be aligned with one another, the first spindle supporting the first component and the second spindle supporting the second component. Takagi fails to disclose an adjusting device being assigned to align the first spindle and/or to align the second spindle. However, **SU '783** discloses an adjusting device mounted on the spindle head of a machine tool [abstract]. The device includes two interleaved frames [**fig. 1**] and two groups [**figs. 2 and 4**], each group having at least three piezoelectric actuators 3-6 and 7-10, being positioned between the two frames at an axial distance from one another. It would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate the piezoelectric adjusting device of SU '783 in the first

and/or second spindle of Takagi in order to ensure axial and angular alignment of the components [abstract] during friction welding.

- b. **As to claim 13,** SU '783 discloses the claimed invention except for two interleaved frames having a ring-shaped cross section. It would have been obvious matter of a design choice to provide a frame with a ring-shaped cross-section since such a modification would have involved a mere change in the shape of the frame. A change in shape is generally recognized as being within the level of an ordinary skill in the art.
- c. **As to claim 14,** SU '783 discloses the two interleaved frames having a rectangular cross section [fig. 1], two groups, each having at least four actuators 3-6 and 7-10, being positioned between the two tubes at an axial distance from one another [figs. 2,4].
- d. **As to claims 15-16,** Takagi as modified by SU '783 discloses a rotary friction welding machine, wherein the actuators are fixedly connected to at least one of the interleaved frames and are movable with respect to the other frame.
- e. **As to claim 17,** SU '783 discloses piezoelectric actuators.
- f. **As to claim 18,** Takagi as modified by SU '783 discloses a rotary friction welding machine, wherein a relative position of the first spindle and the second spindle or of the first and second components to be joined together is measured continuously and that the first and second spindles and thus the two components to be joined together are dynamically aligned during operation of the rotary

friction welding machine via the adjusting device as a function of the measurement.

***Information Disclosure Statement***

5. The information disclosure statement (IDS) submitted on 9/28/06 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

***Conclusion***

**Claims 12-18 are rejected.**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Bayer et al. (US 2006/0231593), DE 10260465.

The rejections above rely on the references for all the teachings expressed in the text of the references and/or one of ordinary skill in the art would have reasonably understood from the texts. Only specific portions of the texts have been pointed out to emphasize certain aspects of the prior art, however, each reference as a whole should be reviewed in responding to the rejection, since other sections of the same reference and/or various combinations of the cited references may be relied on in future rejections in view of amendments.

Applicant is reminded to specifically point out the support for any amendments made to the disclosure. See 37 C.F.R. 1.121; 37 C.F.R. Part 41.37; and MPEP 714.02.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DEVANG PATEL whose telephone number is (571)270-3636. The examiner can normally be reached on Monday thru Thursday, 8:00 am to 5:30 pm, EST..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jessica Ward can be reached on 571-272-1223. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. P./  
Examiner, Art Unit 1793

/Kevin P. Kerns/  
Primary Examiner, Art Unit 1793